week by week, and became very unhealthy in appearance, whilst there was a progressive improvement in the appearance of the plants supplied with increasing amounts of auximones. Those receiving the larger amounts retained their normal healthy appearance throughout the experiment and increased in size.

6. The beneficial effect of the auximones was not due to a neutralisation of the toxic substances present in the ordinary distilled water, since comparable results were obtained with conductivity water.

7. An interchange of culture solutions, with and without auximones, showed that the plants are very sensitive to the presence or absence of these substances.

8. It is suggested that some of these growth-promoting substances may act directly as organic nutrients, and others may be of the nature of accessory food substances.

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